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Jobs quadrant

Labour Statistics: Concepts, Sources and Methods

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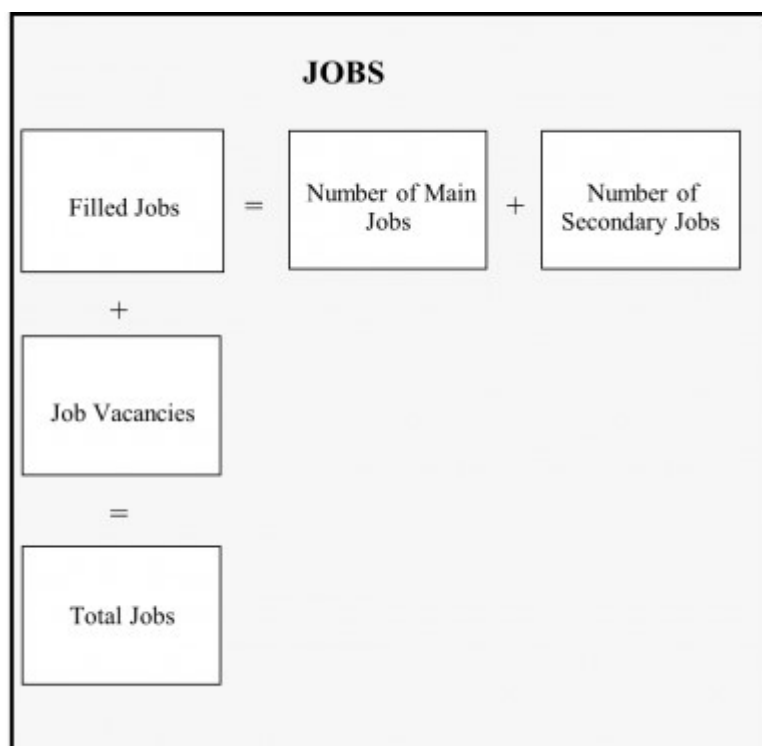
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The Jobs quadrant provides data on the number of jobs, both filled and vacant. Estimates from business surveys are balanced with estimates from household surveys.

Jobs quadrant



Jobs concepts

The concept of a “job” is central to the Australian Labour Account. It is the mechanism through which people engage in production.

The Oxford English Dictionary has multiple meanings for the word, one of which approximates the concept as it is applied in the Australian Labour Account and the 2008 System of National Accounts (2008 SNA) – “a task or piece of work, especially one that is paid”.

The 2008 SNA does not explicitly define a job. Rather, it observes the agreement between an employee and the employer defines a job, and each self-employed person has a job (2008 SNA, 19.30). A self-employed person is treated as both the employer and employee. A job is a position held by a person that involves work, duties or responsibilities; it may or may not

provide returns of compensation or benefits to the individual.

As the dictionary definition implies, not all jobs are paid, either in money or in kind. People can be engaged in productive economic activity within an institutional unit for no apparent reward, in which case they are contributing to output but receiving no compensation. The 2008 SNA concept of a job includes these people as volunteer labour (2008 SNA, 19.39).

Jobs are created by enterprises. In the case of the self-employed person, the International Labour Organisation (ILO) defines these jobs as those where the remuneration is directly dependent upon the profits (or the potential for profits) derived from the goods and services produced (where own consumption is considered to be part of profits). The incumbents make the operational decisions affecting the enterprise, or delegate such decisions while retaining responsibility for the welfare of the enterprise. In this context, "enterprise" includes one person operations.

In summary, and in the context of the Australian Labour Account, a job is a set of production related tasks that can be assigned to and undertaken by a person, and for which they are usually, but not necessarily, remunerated either in money or in kind.

Production related tasks are constrained to economic activity within the 2008 SNA production boundary, and jobs are created and maintained by institutional units (Type of Activity Units within Enterprise Groups in the Australian context).

The Australian Labour Account includes all jobs created and maintained by institutional units (that is, households, legal entities and social entities) resident in Australian economic territory, involving economic activity within the Australian application of the 2008 SNA production boundary.

Estimates of movements in the number of jobs in the economy provide a measure of labour market performance and capacity.

Jobs characteristics

Jobs can be classified according to:

- inherent job characteristics (e.g. whether the job is full-time or part-time),
- characteristics of the person holding the job (e.g. whether the job is filled by a self-employed person or an employee), or
- characteristics of the enterprise creating the job (e.g. the industry or institutional sector to which the job relates).

Status in employment

In the Australian context, self-employment according to the ILO definition is not separately identified. Rather, jobs are distinguished according to the status in employment categories of the people filling the job.

These categories include:

- Employee
- Owner manager of incorporated enterprise
- Owner manager of unincorporated enterprise
- Contributing family worker

The closest approximation to the ILO concept of self-employment in the Australian context is the aggregation of the “owner manager” categories of status in employment.

Employees

Employees are employed people who do not operate their own incorporated or unincorporated enterprise. An employee works for a public or private employer and receives remuneration in wages, salary, on a commission basis (with or without a retainer), tips, piece rates, or payment in kind.

Owner managers of incorporated enterprises

An owner manager of an incorporated enterprise is a person who operates his or her own incorporated enterprise, that is, a business entity which is registered as a separate legal entity to its members or owners (also known as limited liability company).

An owner manager of an incorporated enterprise (an OMIE) may or may not hire one or more employees in addition to themselves and/or other owners of that business.

Owner managers of unincorporated enterprises

In the Australian Labour Account, own-account workers and employers employed in their own enterprises are referred to as Owner Managers of Unincorporated Enterprises (OMUEs). OMUEs are people who operate their own unincorporated enterprise, or engage independently in a profession or trade. An owner manager of an unincorporated enterprise may or may not hire one or more employees in addition to themselves and/or other owners of that business.

Contributing family workers

A contributing family worker is a person who works without pay in an economic enterprise operated by a relative. Contributing family workers, including those working without pay in unincorporated enterprises engaged wholly or partly in market production, are also treated

as self-employed (2008 SNA, 7.30b).

The ILO defines a contributing family worker as a person who holds a self-employment job in an enterprise operated by a related person, and who cannot be regarded as a partner because the degree of his or her commitment to the operation of the enterprise, in terms of the working time or other factors to be determined by national circumstances, is not at a level comparable with that of the head of the establishment.

Internationally the concept is restricted to those living in the same household, however Australia has not applied the same criteria of cohabitation in its implementation. For example, an individual who makes unpaid contributions of labour to a family business operated by their parents, and does not live in the same household as the parents, is still considered to be a contributing family worker.

Own-account workers engaged in the production of goods exclusively for own final use by their household (such as subsistence farming or do-it-yourself construction of own dwellings), are considered employed according to the definition of employment adopted by Thirteenth International Convention of Labour Statisticians (ICLS). Households producing unpaid domestic or personal services (e.g., housework, caring for family members) for their own final consumption are excluded, as such activities fall outside the 2008 SNA production boundary and are not considered employment.

Jobs in the Australian Labour Account

Jobs which are in and out of scope of the Australian Labour Account are summarised in the table below.

Jobs in scope	Jobs out of scope
Paid employment with formal work agreements – i.e. an employer/employee relationship.	Positions which are purely voluntary and no remuneration is received, either in cash or in kind.
Owner managers of businesses – i.e. self-employed people.	Activities relating to the production of unpaid domestic services.
Unpaid contributions of labour to a family business or farm – i.e. contributing family workers.	Activities and positions outside of Australia's economic territory.
Activities relating to the production of goods for own consumption.	Activities relating to unreported illegal transactions.

Jobs and people

The number of jobs in the economy exceeds the number of people employed, to the extent that some employed people have more than one job in the same period. An individual with more than one job may do these successively, as when the person works for part of the week in one job and the rest of the week in another, or in parallel, as when the person has an evening job as well as a daytime job. In addition, the number of jobs in the economy may be reduced when compared to the number of people employed in instances of formal job-

sharing arrangements.

Employers may not be aware of, and in any case are not asked to provide information on, secondary jobs undertaken by their employees. When employers supply information on the number of employees, they actually provide information on the number of jobs they hold. This is because the same employee would be reported separately by each employer. The distinction between the number of jobs and the number of employed people is one issue that is informed by the Australian Labour Account.

The Australian Labour Account recognises this difference by accounting for multiple job holding, and reports the number of jobs in the Jobs quadrant and employed people in the People quadrant. However, the Australian Labour Account does not compile estimates of formal job-sharing, as there is currently no available data source to measure this, and it is particularly unlikely to be reported accurately by businesses.

The statistics derived from the Labour Force Survey are designed to produce estimates of the number of people engaged in economic activity. The statistics derived from ABS business surveys count the number of jobs in which people are employed. For example, a person holding multiple jobs with different employers would be counted once in ABS household surveys as an employed person, but in ABS business surveys would be counted multiple times, once by each employer for each job that they held.

A number of examples illustrate this:

- if an unemployed person became employed full-time (by starting one full-time job), then the full-time employment estimate from the Labour Force Survey would increase by one (in a business survey, or a 'filled jobs' count, this would lead to an increase in the filled jobs estimate by one);
- if an unemployed person became employed full-time (by starting two part-time jobs with a total of 35 hours of work or more per week), then the full-time employment estimate from the Labour Force Survey would increase by one (however, in a business survey, or a 'filled jobs' count, this would lead to an increase in the filled jobs estimate by two);
- if a person who was already employed in one part-time job took on another part-time job, this would have differing impacts on the employment estimates from the Labour Force Survey depending on the total number of hours worked: if the sum of hours worked in the two part-time jobs was fewer than 35 hours per week, the employment estimates from the Labour Force Survey would remain unchanged, but if the sum of hours worked was 35 hours or more, the employment estimates from the Labour Force Survey would show a decrease of one in part-time employment and an increase of one in full-time employment (however, in both cases this would lead to an increase of one in the filled jobs estimate from a business survey);
- if a person who was employed in three part-time jobs (working a total of more than 35 hours per week) resigned from these and assumed one full-time job, this would have no

impact on the employment estimates from the Labour Force Survey (however, this would lead to a decrease of two in the filled jobs estimate - the number of part-time filled jobs would decrease by three while the number of full-time filled jobs would increase by one); and

- if a person employed in two part-time jobs became unemployed, the employment estimate from the Labour Force Survey would decrease by one (however, this would lead to a decrease of two in the filled jobs estimate from a business survey).

The proportion of secondary jobs presents the number of secondary jobs as a proportion of the total number of filled jobs for each industry and the total economy. This measure provides insight into the relative number of secondary jobs in each industry, and enables comparisons across industries and with each industry to an economy wide average.

Proportion of Vacant Jobs

The proportion of vacant jobs (PVJ) provides a useful labour demand-side view of relative labour demand, at the industry level, presenting the relationship between unmet demand (job vacancies) and met demand (filled jobs) within the Australian Labour Account.

The PVJ is calculated as the number of vacant jobs as a proportion of total jobs. This derived measure is a function of filled jobs and job vacancies. By bringing together met demand and unmet demand, the PVJ provides new insights into changes in the labour market.

In addition to providing insights into cyclical labour demand and employment, changes in the PVJ over time can also highlight that some of the following may be occurring:

- Changing employment capacity – there may be indications that the industry is nearing its full employment potential or, conversely, that there is the possibility of future employment growth;
- Job churn – the industry may not be maintaining long term employment, resulting in a high number of job vacancies without long term growth in employment;
- Skill mismatch – current availability of skills may not be able to satisfy employer requirements, resulting in an extended search for appropriately skilled staff; and/or
- Changing employment conditions or arrangements - the industry may be transitioning from full-time to part-time roles, or a greater use of contractors or use of labour hire firms.

Understanding changes in the PVJ (and analysing the underlying factors contributing to these changes) will enable Australia to better understand its labour market.

Jobs sources

Numbers of filled jobs, from the business sources side, are sourced from the following ABS

data:

- Quarterly estimates of private sector jobs are based on underlying data from the Quarterly Business Indicators Survey (QBIS), published in Business Indicators, Australia.
- Quarterly estimates of private sector jobs for ANZSIC divisions that are out-of-scope of QBIS are estimated from the Economic Activity Survey (EAS), published in Australian Industry and use quarterly Compensation of Employees as a quarterly indicator series. The ANZSIC divisions include Division A (Agriculture, Forestry and Fishing) and Division O (Public Administration and Safety).
- Quarterly data for the public sector are based on underlying data from the Public Sector Employment and Earnings (PSEE) and using quarterly public sector Compensation of Employees as a quarterly indicator series.

Business survey data are supplemented by:

- ABS business register information.
- Labour Force Survey estimates of contributing family workers.
- Estimates of Australian Defence Force personnel.
- Estimates of child workers.

The number of filled jobs, from the household survey side, is the sum of the number of main jobs and secondary jobs, less jobs with formal job-sharing arrangements. Estimates for main jobs and secondary jobs are sourced from the Labour Force Survey. Survey based data are supplemented with defence force information, child workers information, information on non-residents working in Australia, and Australian residents living in Australia employed by overseas companies/business entities to account for survey scope restrictions. There is no information currently available on the number of jobs with formal job-sharing arrangements.

Numbers of job vacancies are sourced from Job Vacancies, Australia. Data from the Internet Vacancy Index, published by Jobs and Skills Australia, are used to supplement ABS survey data for the out-of-scope ANZSIC Division A (Agriculture, Forestry and Fishing).

The table below summarises data sources used in compiling estimates of jobs.

Source data	Use in compiling quarterly data
Australian Industry	Used to benchmark quarterly data from Business Indicators, Australia. Also used to compile estimates of private sector filled jobs (business sources) for ANZSIC divisions that are out-of-scope of QBIS, using quarterly Compensation of Employees as quarterly indicator series.
Quarterly Business Indicators Survey	Used to compile quarterly estimates of private sector filled jobs (business sources).
Public Sector Employment and Earnings	Used to compile estimates of public sector filled jobs (business sources), using quarterly Compensation of Employees as the quarterly indicator series.
Australian Business Register	Used for scope adjustments to private sector filled jobs (business sources).
Department of Defence	Used to estimate defence jobs for filled jobs (household and business sources).
Labour Force Survey	Used to estimate filled jobs (household sources), both main and secondary jobs. Also used to estimate unemployment and jobs held by non-residents working in Australia for filled jobs (household and business sources), and model movements jobs held by child workers for filled jobs before and after 2006 (household and business sources).
Child Employment Survey	Used to estimate the base child employment for filled jobs in 2006 (household and business sources).
Participation, Job Search and Mobility and Labour Mobility, Australia	Used to convert estimates of jobs held by child workers over at any point over the year to an end of quarter basis for filled jobs (household and business sources).
Migration, Australia and Overseas Arrivals and Departures, Australia	Used to estimate jobs held by non-residents working in Australia.
Balance of Payments	Used to estimate Australian residents living in Australia but employed by overseas companies/business entities.
Job Vacancies Survey	Used to compile job vacancies, and total jobs.
Internet Vacancy Index (Jobs and Skills Australia)	Used to compile job vacancies, and total jobs, for ANZSIC Division A (Agriculture, Forestry and Fishing).

Jobs methods

The Jobs quadrant provides data on the number of jobs (filled and vacant) as at the end of the quarter. Job statistics are compiled for each ANZSIC industry subdivision and division, and for the economy as a whole. Unless otherwise stated, the methods described apply to both levels of aggregation.

Total jobs

Total jobs is the sum of filled jobs and job vacancies.

Filled jobs

Filled jobs (business sources)

The number of filled jobs, from the business sources side, is equivalent to the number of people employed in enterprises resident in the Australian economic territory and engaged in economic activity within the scope of the National Accounts production boundary. People counted include employees, working proprietors and partners, employees absent on paid or prepaid leave, employees on workers' compensation who continue to be paid through the payroll, and contract workers paid through the payroll.

Filled jobs (business sources), for each quarter, is estimated by aggregating:

- For the private sector, the number of employees as at the end of each quarter, sourced

from the annual Economic Activity Survey (EAS) and published in Australian Industry;

- For the public sector, the number of employees as at the end of each quarter, derived using underlying data from Public Sector Employment and Earnings (PSEE). PSEE data used in the Australian Labour Account exclude units in the non-financial and financial sectors, as they are also in scope of the EAS; and
- Quarterly estimates of underlying Quarterly Business Indicator Survey (QBIS) data from Business Indicators, Australia to represent private sector employment in ANZSIC Division K (Finance and Insurance Services), which is out of scope of the EAS.

These three surveys cover most of the ANZSIC industries, except for:

- Class 6310 Life Insurance;
- Class 6330 Superannuation Funds; and
- Class 7600 Defence.

Units in ANZSIC Class 6330 Superannuation Funds are funds set up to provide retirement benefits. Conceptually they are considered to be non-employing units, and therefore would not contribute to Australian Labour Account estimates. As such, no estimate for employment in this industry has been included.

Scope adjustments are made for the following sectors and populations:

Add:

- the number of jobs in ANZSIC Class 6310 (Life Insurance), sourced from underlying data from the ABS Business Register. This industry is not included in the EAS or QBIS;
- the number of jobs held by members of the permanent defence forces as at the end of each quarter, sourced from underlying ABS National Accounts data. All defence force personnel in Class 7600 (Defence) are assumed to work in the Public Administration and Safety industry (ANZSIC Division O);
- the number of unpaid contributing family worker (jobs) for the quarter, sourced from the Labour Force Survey, as unpaid employees are out of scope of ABS business surveys; and
- the estimate of the number of jobs held by children aged 5 to 14 (child workers) (see the People quadrant for details on how the child worker adjustment is modelled). Status of employment splits are applied to separately identify employees. Employees are excluded from this adjustment given they are in scope of both EAS and QBIS.

Deduct:

- the number of people engaged in ANZSIC subdivision 28 Water Supply, Sewerage and Drainage in the public sector (as measured on the ABS Business Register). This is done because businesses in this subdivision are in sample of both EAS and PSEE. ABS Business Register data are available from June 2007. For earlier time periods, the data is

extrapolated using movements in filled jobs for the Electricity, Gas, Water and Waste Services industry division.

Calculation of filled jobs (business sources) by industry

Data derived from an annual survey are generally considered to be of higher quality than quarterly data due to the larger sample sizes, and are generally subject to less volatility than quarterly run surveys. Annual source data provide overall levels, known as annual benchmarks, from which quarterly estimates by industry divisions and subdivisions are compiled. This ensures consistency between the quarterly and annual labour accounts.

For all ANZSIC industry divisions except A (Agriculture, Forestry and Fishing); K (Financial and Insurance Services) and O (Public Administration and Safety), a mathematical technique (the modified Proportional Denton Method) is used to benchmark quarterly stocks of private sector jobs reported in QBIS to annual data from EAS. This ensures the benchmarked quarterly levels are identical each June quarter, while maintaining the observed quarterly pattern from QBIS as much as possible.

For the most recent quarters, for which EAS year-end data are not available, the previous year-end EAS numbers are extrapolated, also using the modified Proportional Denton Method. Extrapolated data are calculated for up to 6 quarters, due to the 18-month lag in the delivery of EAS data.

For Division A (Agriculture, Forestry and Fishing) and Division O (Public Administration and Safety), for which QBIS data are not available, EAS estimates of the number of jobs is used as an annual benchmark, with quarterly Compensation of Employees used as a quarterly indicator series.

For Division K (Finance and Insurance Services) for which EAS data are not available, employment data reported in QBIS are used directly as the quarterly estimate of private sector job holding.

To calculate the number of public sector filled jobs, underlying data from Public Sector Employment and Earnings (PSEE) are used as an annual benchmark, with quarterly public sector Compensation of Employees used as a quarterly indicator series.

EAS data are not available on a consistent industry classification prior to 2009-10. For time periods prior to June 2010, filled jobs as measured from business sources are derived as follows:

- From December quarter 2001 to June quarter 2010: seasonally adjusted movements in Compensation of Employees (which have been price deflated using the Wage Price Index), are applied to the June 2010 level.

- From September quarter 1994 to December quarter 2001, movements in the number of employees from Wage and Salary Earners, Australia are applied to the December 2001 level. These data relate to both the public and private sectors for each industry division except for Division A (Agriculture, Forestry and Fishing), which is limited to the public sector only. Applying movements from the Agriculture industry based on the public sector data produces large movements, given the small level associated with the indicator series. Movements from the Transport and Storage industry are instead used as a proxy, given the strong links in production and supply chains between agriculture and transport. As the data are also on a historical industry classification basis, conversion factors based on employees from the Labour Force Survey are applied to approximate the current industry classification.

Filled jobs (household sources)

The number of filled jobs, from the household side, is equal to the number of people employed in main jobs and secondary jobs sourced from the household Labour Force Survey.

Filled jobs (household sources), for each quarter, are estimated by aggregating:

- the number of main jobs reported in the end of quarter reference month (i.e. March, June, September and December) in the household Labour Force Survey and published in Labour Force Australia, and
- the number of secondary jobs reported in the end of quarter reference month in the household Labour Force Survey.

The following scope adjustments are made:

Add:

- the number of people employed in the permanent defence forces as at the end of each quarter, to the estimate of main jobs. Defence force personnel are not in scope of the Labour Force Survey, and these data are sourced from underlying ABS National Accounts data. All defence force personnel are assumed to work in ANZSIC Division O (Public Administration and Safety). Permanent defence force personnel are also assumed to work solely in their main job and not have multiple jobs;
- the number of jobs held by children aged 5 to 14 years (child workers) to the estimate of main jobs. It is assumed that child workers do not work more than one job. Estimates of the employment rate of children aged 5 to 14 years are modelled based on data sourced from the Child Employment Survey and the Labour Force Survey (LFS). The Child Employment Survey was conducted once, in 2006, so movements in LFS data are used to extrapolate the estimates across time. LFS data is also used to model the industry of employment. The Child Employment Survey measured employment on the basis of having worked at any point over the 12 months to date. Those employment estimates are converted to an end-of-quarter basis using data from the Participation, Job Search and Mobility Survey (PJSMS). The LFS and PJSMS data used are restricted to people aged 15

years on the assumption that their characteristics are the most comparable, of any age group with consistently measured employment, to the population aged 5 to 14 years. Status of employment splits are applied to separately identify employees. Employees are excluded from this adjustment given they are in scope of both EAS and QBIS;

- an estimate of the number of main jobs held by non-resident visitors to Australia who are employed by Australian resident enterprises to the estimate of main jobs (see Non-resident visitors section below); and
- an estimate of the number of secondary jobs held by non-resident visitors employed by Australian resident enterprises to the number of secondary jobs.

Non-resident visitors

Time periods from March 2006 onwards

The Labour Force Survey excludes from its scope non-resident visitors who intend spending less than 12 months in Australia, some of whom are employed during their stay by Australian resident enterprises. As non-resident visitors are included in the scope of business surveys (EAS and QBIS), only household side labour force data are adjusted to include non-resident visitors who are employed.

Data on the number of non-resident visitors who are present in Australia at the end of the reference quarter but who are not included in the Estimated Resident Population are based on estimates of Net Overseas Migration and Overseas Arrivals and Departures. NOM data is available from March 2006 to five quarters prior to the current quarter, and OAD data is available for the entire Labour Account series. Movements in OAD data are used to extrapolate the NOM data where necessary.

Of interest for the Labour Account scope adjustments, are non-residents who have entered the country with a visa that has an associated work entitlement. Information about the main reason for journey is collected, as is information on whether an individual is the primary or a secondary applicant to the visa. The visa classes, reasons for journey and applicant splits, that form the basis of modelled job estimates, are detailed below.

Visa subclasses used in the Australian Labour Account

Visa subclass

- 173 Contributory Parent (Temporary)
- 400 Temporary Work (Short Stay Activity) (from 23/3/13)
- 401 Temporary Work (Long Stay Activity) (from 24/11/12)
- 402 Training and Research (from 24/11/12)
- 403 Temporary Work (International Relations) (from 24/11/12)
- 405 Investor Retirement (from 1/11/04)

408 Temporary Activity
410 Retirement
416 Special Program
417 Working Holiday
419 Visiting Academic
420 Entertainment
421 Sport
422 Medical Practitioner
423 Media and Film Staff
424 Public Lecturer
427 Domestic Worker Overseas Executive
428 Religious Worker
430 Supported Dependent of Australian or NZ Citizen Temp in Australia
442 Occupational Trainee
444 Special Category - New Zealand Citizen
456 Business (Short Stay) (from 1/8/96)
457 Temporary Work (Skilled) (from 24/11/12) previously Business (Long Stay) (from 1/8/96)
459 Sponsored Business Visitor (short stay) (from 1/7/00)
461 New Zealand Citizen (Family Relationship) Temporary Visa (from 26/2/01)
462 Work and Holiday
470 Professional Development (from 1/7/03)
476 Skilled - Graduate (from 1/9/07)
482 Temporary Skill Shortage (from 18/03/2018)
485 Temporary Graduate (from 23/3/13) previously Skilled - Graduate (from 1/9/07)
(replaced 497)
570 Independent ELICOS Sector(from 1/7/01)
571 Schools Sector (from 1/7/01)
572 Vocational Education and Training Sector (from 1/7/01)
573 Higher Education Sector (from 1/7/01)
574 Postgraduate Research Sector (from 1/7/01)
575 Non-Award Foundation/Other Sector (from 1/7/01)
576 Ausaid/Defence Sponsored Sector (from 1/7/01)
884 Contributory Aged Parent (Temporary)

Non-residents are filtered into five groups based on their visa class: student visa holders, sponsored visa holders, 444 visa holders, working holiday visa holders, and other non-student visa holders.

Non-residents: main jobs

To estimate the number of main jobs held by non-resident student visa holders, an employment rate for holders of student visas is sourced from the Survey of Education and Work (SEW). The SEW data used in this calculation is limited to those student visa holders who arrived in Australia within the past two years. The method assumes that similar rates of employment apply to non-resident students as for resident students who recently arrived from overseas. SEW data is available annually from 2013 to the current year. The annual dataset is converted into a quarterly series using employment estimates (for the domestic student population) from the Labour Force Survey. Movements in the Labour Force Survey series are also applied to the level in 2013 to produce estimates prior to 2013. The quarterly employment rate series is then multiplied by the number of student visa holders to estimate the number of main jobs held by non-resident student visa holders.

To estimate the number of main jobs held by non-resident sponsored visa holders, an employment rate of 100% is assumed to apply for primary visa holders, while the secondary visa holders (that have working rights) are grouped with other non-student visa holders. This is because the skilled migration visas require that the primary applicant is employed for the duration of their presence while holding the visa.

To estimate the number of main jobs held by non-resident working holiday visa holders (working holiday makers), an equivalent method as for students is applied. For working holiday makers, the SEW data is restricted to non-student visa holders (excluding NZ citizens), and the LFS data is restricted to non-students.

To estimate the number of main jobs held by non-resident holders of a 444 visa (New Zealand citizens), an equivalent method as for students is applied. For 444 visa holders, the SEW data is restricted to New Zealand (NZ) citizens, and the LFS data is restricted to non-students.

To estimate the number of main jobs held by non-resident other non-student visa holders, an equivalent method as for working holiday makers is applied.

Non-residents: secondary jobs

To estimate the number of secondary jobs held by non-resident student visa holders, the estimated number of employed non-resident student visa holders is multiplied by the proportion of employed resident students who hold multiple jobs, which is sourced from the Labour Force Survey. This method assumes the same proportion of multiple job holding for non-resident students as for the domestic student population.

Sponsored visa holders are assumed to hold no secondary jobs due to the restrictions associated with their visa.

To estimate the number of secondary jobs held by non-resident non-student visa holders (excluding sponsored visa holders), the estimated number of employed non-resident non-student visa holders (excluding sponsored visa holders) is multiplied by the proportion of employed resident non-students who hold multiple jobs, which is sourced from the Labour Force Survey. This method assumes the same proportion of multiple job holding for non-resident non-students as for the domestic non-student population.

There is a time lag in the estimation of Net Overseas Migration (NOM) data. Consequently, estimates of short term visitors for the latest quarters are extrapolated by applying movements in Overseas Arrivals and Departures (OAD) data to estimates of NOM. The movements are applied after matching visa codes and reasons for journey between the NOM and OAD series.

Time periods from September 1994 to December 2005

OAD and NOM data with both visa type and reason for journey are not available for the entire time series of the Australian Labour Account. For earlier time periods, the following data are available:

- NOM data classified by reason for journey by visa type is available from March 2006
- OAD data classified by reason for journey by visa type is available from September 2004
- OAD data classified by reason for journey only is available from September 1993.

As with the current end of the NOM series, estimates for the periods prior to March 2006 are modelled from OAD data by applying movements with matching visa codes and reasons for journey category to the estimates of March 2006.

The resulting series are aggregated to students, non-students and sponsored visa holders in the same way as for the rest of the time series.

Disaggregation to industry

Jobs held by non-residents are apportioned across industry subdivisions in the following ways:

1. Main jobs held by student visa holders are classified to industry subdivision using proportions derived from the Survey of Education and Work for employed student visa holders. The SEW data are converted to quarterly series and extrapolated using LFS data in a similar manner as outlined above for determining the rate of employment.
2. Main jobs held by sponsored visa holders are classified to industry division using proportions derived from data on the industry of sponsoring businesses published by the Department of Home Affairs for 2016-17 and 2017-18. Division estimates are extrapolated where not available, and apportioned to industry subdivision, using LFS data restricted to non-students employed full-time.

3. Main jobs held by working holiday visa holders are classified to industry division using proportions derived from data on the industry of businesses employing working holiday makers published by the Australian Taxation Office. Division estimates are extrapolated where not available, and apportioned to industry subdivision, using LFS data restricted to employed non-students.
4. Main jobs held by holders of a 444 visa (New Zealand citizens) are classified to industry subdivision using proportions derived from the Survey of Education and Work for employed New Zealand citizens. The SEW data are converted to quarterly series and extrapolated using LFS data in a similar manner as outlined above for determining the rate of employment.
5. Main jobs held by other non-student visa holders are classified to industry subdivision using proportions derived from the Survey of Education and Work for employed non-student visa holders. The SEW data are converted to quarterly series and extrapolated using LFS data in a similar manner as outlined above for determining the rate of employment.
6. Secondary jobs held by student visa holders are classified to industry subdivision based on the LFS rate of multiple job holding of resident students with a main job in that subdivision.
7. Secondary jobs held by non-student visa holders are classified to industry subdivision based on the LFS rate of multiple job holding of resident non-students with a main job in that subdivision.

Calculation of filled jobs (household sources) by industry

The Labour Force Survey collects quarterly data on the industry of the main job held by employed people. For each employed person, it also collects the number of secondary jobs held (second, third, fourth or more). The Labour Force Survey does not record the industry of secondary jobs. To calculate the number of filled jobs and people employed at an industry level requires the allocation of each secondary job to an industry.

This is done in the Australian Labour Account by first obtaining the total number of multiple job holders and the number of second, third and fourth jobs from the Labour Force Survey. Employed people who indicate they hold more than four jobs are assumed to hold only four jobs, as no further information on the number of jobs actually held is available. At this stage of compilation, multiple job holders and second, third and fourth jobs are classified by the industry of main job for each employed person.

Data from the ABS Linked Employer Employee Dataset (LEED) are then used to determine the proportions of the industry of employment of second, third and fourth jobs for multiple job holders, and applied to industry of main job Labour Force Survey data. These proportions are extracted as at the end date for each quarter from the LEED, and are updated as new data points become available. Industry proportions from the earliest

available LEED are applied to earlier time periods in the Australian Labour Account, and similarly the latest available proportions are applied to subsequent time periods where necessary.

Where relevant, data are sourced from information collected in the Labour Force Survey in the last month of the relevant quarter, and apportioned across industry divisions and subdivisions using the related quarterly labour force industry data. For example, estimates in the September quarter Australian Labour Account are sourced from September month Labour Force data, which are then distributed across industry divisions and subdivisions from the industry distribution of quarterly data captured in the August Labour Force Survey published in Labour Force, Australia, Detailed, Quarterly.

Sector of Filled Jobs

One commonly used sector classification in labour statistics is the public and private sector classification. In this classification, the public sector includes all government units, such as government departments, non-market non-profit institutions that are controlled and mainly financed by government, and corporations and quasi-corporations that are controlled by government. The private sector refers to enterprises that are not controlled by Commonwealth, state/territory or local governments (that is, any enterprise that is not part of the public sector).

The Australian Labour Account publishes estimates of private and public sector filled jobs. These are compiled by applying proportions from business sources (with data from the Economic Activity Survey representing the private sector, and data from the Public Sector Employment and Earnings representing the public sector) to balanced numbers of filled jobs for each industry.

Job sharing

There is currently no household side information available on the number of jobs with job sharing arrangements. As a result, the total number of filled jobs is equivalent to the sum of reported main jobs and secondary jobs, plus scope adjustments. As with the business side, shared jobs on the household side would be counted as many times as there are people engaged in such arrangements.

Annual jobs methods

The Jobs quadrant contains stock data, which are data that measure certain attributes at a point in time. To determine an annual estimate of jobs in this quadrant, an average level is derived using a simple arithmetic average of the four quarterly estimates. Refer to Labour Account Methods for an example of this method.

The annual estimate of jobs is an approximate estimate of the number of jobs at any point in time during the year.

Job vacancies

A job vacancy is a job available for immediate filling on the survey reference date and for which recruitment action has been taken. Recruitment action includes efforts to fill vacancies by advertising, by on site or online notices, by notifying employment agencies or trade unions and by contacting, interviewing or selecting applicants already registered with the enterprise or organisation.

Estimates of job vacancies exclude:

- jobs not available for immediate filling on the survey reference date;
- jobs for which no recruitment action has been taken;
- jobs which became vacant on the survey date and were filled on the same day;
- jobs of less than one day's duration;
- jobs only available to be filled by internal applicants within an organisation;
- jobs to be filled by employees returning from paid or unpaid leave or after industrial disputes;
- vacancies for work to be carried out by contractors; and
- jobs for which a person has been appointed but has not yet commenced duty.

Total quarterly job vacancies are calculated as:

- the sum of the number of vacant positions reported in the ABS Job Vacancies Survey for the relevant quarterly reference date/month (3rd Friday of February, May, August and November) and published in Job Vacancies, Australia (ABS cat. no. 6354.0); plus
- the number of job advertisements from Jobs and Skills Australia Internet Vacancy Index (as at the 1st day of the third month of the reference quarter; i.e. 1 March, 1 June, 1 September, 1 December), for the following Australian and New Zealand Standard Classification of Occupations (ANZSCO) occupation codes: 12 Farmers and Managers; 36 Skilled Animal and Horticultural Workers; and 84 Farm, Forestry and Garden Workers.

Internet Vacancy Index data are added to capture vacancies available in employing enterprises primarily engaged in Agriculture, Forestry and Fishing, which are out of scope of the quarterly ABS Job Vacancies Survey.

Industry detail at the ANZSIC subdivision level is not available directly from either the ABS Job Vacancies Survey or Jobs and Skills Australia Internet Vacancy Index, and is modelled in the Australian Labour Account using the following methods:

- For subdivisions within Division A (Agriculture, Forestry and Fishing), information from

Jobs and Skills Australia Internet Vacancy Index for agricultural occupations at four digit ANZSCO level are aggregated to approximate these ANZSIC subdivisions; and

- For all remaining subdivisions, ANZSIC division level information from the Job Vacancies Survey is disaggregated to subdivision level using data from the Labour Force Survey relating to employees by subdivision (excluding Owner Managers of Unincorporated Enterprises).

Data from the ABS Job Vacancies Survey are available on the current ANZSIC 2006 industry classification from November 2009 onwards, and data on an ANZSIC 1993 basis and the total number of job vacancies are available for earlier time periods. Data for each ANZSIC 2006 industry division for earlier time periods are estimated by applying a concordance between the ANZSIC 1993 and ANZSIC 2006 industry classifications. The known total number of job vacancies is maintained using this approach. Data at the industry division level are then distributed to industry subdivision by applying proportions from the LFS employees (excluding Owner Managers of Unincorporated Enterprises) series.

The Job Vacancies Survey was suspended for five periods between August 2008 and August 2009 inclusive, as a result of a series of cuts to the ABS forward work program. The ABS has used econometric modelling techniques using a full-time equivalent flow series to estimate total job vacancies for the missing period. It should be noted that the modelled data are not part of the Job Vacancies Survey series and are not available in the related publication or the Australian Labour Account. However, modelled data for the gap period have been used in the production of seasonally adjusted and trend time series data.

Job vacancies for each industry for the period September 2008 and September 2009 have been estimated by applying the movement from the LFS number of employees (excluding Owner Managers of Unincorporated Enterprises) to subdivision level job vacancies data on an ANZSIC 2006 basis from December 2009. These industry estimates are constrained to the modelled total number of job vacancies for this period.

Data from the Jobs and Skills Australia are available from January 2006 onwards. Data for earlier time periods are estimated by applying the movement in the number of employees (excluding Owner Managers of Unincorporated Enterprises) for each Agriculture subdivision from the LFS to the 2006 level.

Jobs quadrant calculations

Jobs quadrant sources and calculations

